

WHAT IS CLAIMED IS:

1. An SRAM device, comprising:

an SRAM array coupled to row peripheral circuitry by a word line and coupled to column peripheral circuitry by bit lines; and an array low voltage control circuitry that provides an enhanced low operating voltage V_{ESS} to said SRAM array during at least a portion of an active mode thereof.

2. The SRAM device as recited in Claim 1 wherein said array low voltage control circuitry provides said enhanced low operating voltage V_{ESS} only during a WRITE operation.

3. The SRAM device as recited in Claim 1 wherein said array low voltage control circuitry provides said enhanced low operating voltage V_{ESS} during all of said active mode.

4. The SRAM device as recited in Claim 1 wherein said array low voltage control circuitry provides said enhanced low operating voltage V_{ESS} during all modes.

5. The SRAM device as recited in Claim 1 wherein said array
low voltage control circuitry provides said enhanced low operating
voltage V_{ESS} based on a factor selected from the group consisting
of:

- a process corner,
- a transistor parameter,
- a mode of operation, and
- a value of a high supply voltage.

6. The SRAM device as recited in Claim 1 wherein said array
low voltage control circuitry provides said enhanced low operating
voltage V_{ESS} at a higher value when based on a strong n process
corner.

7. The SRAM device as recited in Claim 1 wherein said array
low voltage control circuitry provides said enhanced low operating
voltage V_{ESS} at a lower value during a READ operation than during a
WRITE operation.

8. The SRAM device as recited in Claim 7 wherein said array
low voltage control circuitry only provides said lower value for an
addressed column of said SRAM array.

9. The SRAM device as recited in Claim 1 wherein said array
low voltage control circuitry employs an active component to
provide said enhanced low operating voltage V_{ESS} .

10. The SRAM device as recited in Claim 1 wherein said array
low voltage control circuitry provides said enhanced low operating
voltage V_{ESS} employing a component selected from the group
consisting of:

a diode,

a transistor,

a fuse,

a ROM,

a voltage regulator, and

logic circuitry.

11. The SRAM device as recited in Claim 1 wherein said array
low voltage control circuitry provides said enhanced low operating
voltage V_{ESS} at a higher value than a low operating voltage V_{SS} .

12. A method of operating an SRAM device, comprising:

employing in an integrated circuit an SRAM array coupled to
row peripheral circuitry by a word line and coupled to column
peripheral circuitry by bit lines; and

providing an enhanced low operating voltage V_{ESS} to said SRAM
array during at least a portion of an active mode.

13. The method as recited in Claim 12 wherein said providing
only occurs during a WRITE operation.

14. The method as recited in Claim 12 wherein said providing
occurs during all of said active mode.

15. The method as recited in Claim 12 wherein said providing
occurs during all modes.

16. The method as recited in Claim 12 wherein said providing
is based on a factor selected from the group consisting of:

a process corner,

a transistor parameter,

a mode of operation, and

a value of a high supply voltage.

17. The method as recited in Claim 12 wherein said enhanced
2 low operating voltage V_{ESS} is provided at a higher value based on
3 a strong n process corner.

18. The method as recited in Claim 12 wherein said enhanced
2 low operating voltage V_{ESS} is provided at a lower value during a
3 READ operation than during a WRITE operation.

19. The method as recited in Claim 18 wherein said lower
2 value is only provided for an addressed column of said SRAM array.

20. The method as recited in Claim 12 wherein said providing
2 includes employing an active component to provide said enhanced low
3 operating voltage V_{ESS} .

21. The method as recited in Claim 12 wherein said providing
2 includes employing a component selected from the group consisting
3 of:

4 a diode,

5 a transistor,

6 a fuse,

7 a ROM,

8 a voltage regulator, and

9 logic circuitry.